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EXAMINER	
YAO, SAMCHUAN CUA	
ART UNIT	**PAPER NUMBER**
1733	

DATE MAILED: 09/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/608,163	MAGNIN ET AL.	
	Examiner	Art Unit	
	Sam Chuan C. Yao	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 September 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *12-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *12-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claims 12-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 12-13 as presently amended now embrace a powder adhesive being *"synthetic polymer contains functional monomers and/or has a glass temperature Tg of between -60 and +40 °C"*, **and** at the same time the polymer is activatable with a water mist, "when the polymer contains a shell and core" and "with a pH adjusted water mist when the pH-activated polymer is forming reactive bonds and/or contains NR^3H^+ groups" (claim 12). In other words, the presently claimed subject matter now embraces an embodiment where a powder adhesive is both heat-activated and water activated. The original disclosure fails to reasonably convey to one in the art applicant has in possession at the time the invention was made to this presently claimed subject matter. Much less a power adhesive being a mixture of natural polymer and synthetic polymer, the *"synthetic polymer contains functional monomers and/or has a glass temperature Tg of between -60 and +40 °C"*, **and** comprising "cationic functionality and is activated by water or by pH adjusted water" (claim 13).

As for claim 14, while it is acknowledged (as argued by Counsel) that the original disclosure teaches the following non-limiting combinations: paper/paper, cardboard/paper, plastic/glass and plastic/paper, nonetheless, the subject matters in claims 12 and 14 introduce New Matter to the original disclosure, because the combined limitations now read on (for example) paper/leather, paper/wood, paper/glass, paper/non-woven, etc. The original disclosure would not have suggested to one in the art that Applicant has in possession to the above exemplars of embodiment.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 12, 14-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akasaki et al (US 4,859,266) in view of Yamanaka et al (US 2002/0132546 A1) and further in view of either of Katz (US 5,556,690) or Chumbley et al (US 5,716,687).

With respect to claims 12,14, 16,18 and 20, Akasaki et al discloses a process for bonding a pair of fabrics. The process comprises providing a target non-conductive fabric (39); electrostatically applying a nylon (i.e. an amide functional group) powdered adhesive onto the fabric; overlaying a 2nd fabric onto the adhesive coated

fabric; and then applying heat and pressure to the pair of fabrics to soften (i.e. activate) the powdered adhesive to bond the fabrics together; wherein the nylon (i.e. containing amide functional monomers) powdered adhesive has a melting range (i.e. heat-activatable) of 115-125 °C (abstract; col. 1 line 64 to col. 2 line 59; col. 4 lines 2-68; col. 5 lines 17-39).

Akasaki et al does not teach activating a powder adhesive before a 2nd substrate is applied onto a powder adhesive coated 1st substrate. However, such would have been obvious in the art, because one in the art would have readily recognized that such is an effective alternative way to heat-activate a powder adhesive which is coated onto a 1st substrate. A preference on whether to heat-activate a powder adhesive coating on a 1st substrate before or after 2nd substrate is applied to the 1st substrate in a process of Akasaki et al is taken to be well within the purview of choice in the art. None, but only the expected result (of heat-activating a powder adhesive coating so that 1st and 2nd substrates can effectively be bonded together) would have been achieved. Moreover, heat-activating a hot-melting adhesive coating on a 1st substrate before a 2nd substrate is applied to the 1st substrate is an art recognized way for bonding a pair of substrates together using a hot-melting adhesive as exemplified in the teachings of either Katz (col. 5 lines 8-65; figure 1) or Chumbley et al (col. 2 lines 53-67; col. 4 lines 18-67; col. 6 lines 1-10; figures 4 and 7).

Akasaki et al does not teach using a paper or plastic substrate. However, it would have been obvious in the art to use a melt-blown (i.e. thermo**plastic**) non-woven

web suggested by Yamanaka et al in the process of Akasaki et al, because: a) Akasaki et al is silent on the type of material which is used for making a fabric; and, b) Yamanaka et al, drawn to making a non-woven web, teaches forming a melt-blown (i.e. thermoplastic) nonwoven web comprising extremely fine polyarylene sulfide fibers, the fabric has "excellent in a heat resistance, a chemical resistance, flame resistance, mechanical properties, etc. ..." (abstract; numbered paragraphs 1 and 52). Note: since applicant fails to positively require using a plastic film (and also fails to define the plastic to be a film in the specification), the plastic recited in claim 12 reasonably taken to read on thermoplastic non-woven web such as melt-blown nonwoven web taught by Akasaki et al.

With respect to claims 15 and 17, while Akasaki et al teaches applying and bonding a second fabric to a heat-activated thermoplastic powder adhesive coating on a 1st fabric (figure 5), Akasaki et al does not teach simultaneously depositing and heat-activating a thermoplastic powder adhesive or bonding an adhesive coated fabric to another fabric in a different manufacturing line. However, such would have been obvious in the art, because, absent any showing of unexpected benefit, a preference on whether to simultaneously or to sequentially deposit and activate thermoplastic powder for bonding a pair of fabrics or to bond an adhesive coated fabric to another fabric in the same manufacturing or not are taken to be well within the purview of choice in the art. There is none, but only the expected result of adhesively bonding a pair of fabrics together by heat-softening a thermoplastic powder would have been achieved.

4. Claims 12 and 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rinchart et al (US 5,827,608) in view of either (Hefele (US 4,080,347) or McConnell et al (US 4,727,107).

With respect to claims 12, 16 and 20, Rinchart et al discloses a process for making a composite comprising a hot-melt adhesive coated film. The process comprises electrostatically applying a thermoplastic powder onto a thermoplastic film, heat-pressing the thermoplastic powder coated film to soften the thermoplastic powder and form a continuous thermoplastic coating layer; wherein the thermoplastic powder can be anyone of polyamide, polyester, etc. (abstract, col. 1 lines 7-10; col. 2 lines 9-43; col. 4 line 31 to col. 5 line 19; col. 6 lines 8-60; claims 1 and 10; figures 1-2 and 4). While Rinchart et al does not explicitly disclose adhering a finished composite comprising a non-metallic substrate and a thermoplastic layer onto another substrate, the teachings of Rinechart et al as a whole would have suggested to one in the art that the finished composite is adhered onto another substrate by heat-activating the thermoplastic layer, because Rinechart et al is directed to making a composite for use as protective layer for an *"outdoor durable sign"*.

While Rinchart et al teaches using a polyamide or polyester powder, Rinchart is silent on the heat-activation (i.e. softening/melting temperature range) of the polyamide or polyester powder. However, Hefele discloses the desirability of using a hot melting polyamide powdered adhesive which has a melting temperature range of 55-95 ^{o}C (abstract; col. 2 lines 1-25). Absent any showing of unexpected result, since: a) Rinechart is virtually open to using any types of thermoplastic adhesive as

evidence from the following passages: *"Powders suitable for powder coating ... one or more thermoplastic polymers chosen to give desirable properties ... Nonlimiting examples ... polyamide, polyester, ..."* (col. 6 lines 35-53); and b) it is well within the purview of choice in the art to choose from among known effective polyamide hot-melting powdered adhesives in the art, it would have been obvious in the art to use a polyamide powder suggested by Hefele in the process of Rinechart et al. An incentive for one in the art to use a polyamide adhesive taught by Hefele would have simply been to obtain the self-evident advantage of providing an hot-melting adhesive with a low heat-activation (i.e. softening/melting) temperature so that less energy is required to heat-activate the adhesive on the composite as it being used to provide a protective layer onto an outdoor sign/indicia. It directly follows that, since a polyamide powdered adhesive suggested by Hefele has melt-range of 55-95 °C, a thermoplastic powder with a heat-activation temperature range of 55-95 °C would have been obvious in the art.

Alternatively, it would have been obvious in the art, motivated by the desire to provide fire-retardant characteristic to a protective composite of Rinechart, to use a polyester hot-melt particulate adhesive suggested by McConnell et al, because McMcConnell et al, drawn to a particulate adhesive of a type (i.e. polyester) suggested by Rinechart, discloses a hot-melt modified polyester particulate adhesive having a flame retardant which is *"safe and nontoxic"* (col. 1 line 8 to col. 2 line 34). It directly follows that, since the polyester in the particulate adhesive of

McMcConnell has a melting range of 80-180 °C, a thermoplastic powder with a heat-activation temperature range of 80-120 °C would have been obvious in the art.

With respect to claims 14, 18-19, an outdoor sign/indicia which is made of metal, plastic or wood is notoriously well known in the art. It would have been obvious in the art to adhere a heat-activated thermoplastic layer of a composite having a graphic/marking substrate layer onto a metallic or non-metallic outdoor post as such is conventional in the art. None but only the expected result of providing a protective film onto an outdoor sign would have been achieved.

With respect to claims 15 and 17, Rinechart does not teach simultaneously depositing and heat-activating a thermoplastic powder adhesive or bonding an adhesive coated fabric to another fabric in a different manufacturing line. However, such would have been obvious in the art, because, absent any showing of unexpected benefit, a preference on whether to simultaneously or to sequentially deposit and activate thermoplastic powder for bonding a pair of fabrics or to bond an adhesive coated fabric to another fabric in the same manufacturing or not are taken to be well within the purview of choice in the art. There is none, but only the expected result of adhesively bonding a pair of fabrics together by heat-softening a thermoplastic powder would have been achieved.

Response to Arguments

5. Applicant's arguments filed on 08-30-06 have been fully considered but they are not persuasive.

On page 4 full paragraph 2, Counsel cited passages, which alleged provide support to the subject matters presently recited in claim 12. However, since a polymer which is a *"synthetic polymer contains functional monomers and/or has a glass temperature Tg of between -60 and +40 °C"* is directed to a heat-activated polymer, the presently claimed subject matters now embraces using a heat-activated powder adhesive **and** a water activated powder adhesive. While the cited passages provide support for using a heat activated powder adhesive **or** water activated powder adhesive, they failed to provide sufficient support for using a powder adhesive which is both heat activate **and** water activated. As for Counsel's argument regarding powder adhesive being applied to various substances and several non-limiting examples, these do not change the fact that the claims as presently recited now embrace the following combination (for example): paper/leather, paper/wood, paper/glass, paper/non-woven, etc. The original disclosure failed to reasonably convey to one in the art that Applicant has in possession at the time the invention was made to the above exemplars of embodiment.

As for Counsel's arguments on page 4 last paragraph 3 to page 5 paragraph 1 regarding the 103 rejection of claims over the Akasaki et al patent in view of the prior art references of record, such is moot in light of a new ground of rejection noted above.

On page 5 full paragraph 1, Counsel argued that a coating layer is different from an adhesive layer since one of the surface of the coating layer is exposed to air,

while the surfaces of the adhesive are in contact with substrates. While it true that Rhinehart et al teaches forming a thermoplastic adhesive coating to a substrate, the coated substrate is eventually bonded to another substrate. See for example column 1 lines 13-21 of the Rhinehart patent. Therefore, this thermoplastic coating is also used as an adhesive. Equally important, the presently claimed invention also requires forming an adhesive coated substrate and then bonding the coated substrate to another substrate in a different manufacturing line (claim 17). Clearly this is quite similar process envisioned by Rhinehart patent. Counsel further argued that, a coating layer "... at elevated temperature – be non-tacky and must have a certain scratch hardness, as well as other properties ...". First of all, why one would one in the art exposes a thermoplastic adhesive coating layer to an elevated temperature unless a thermoplastic adhesive coated substrate is ready to be applied to another substrate. Moreover, as illustrated in figures 1-2, the coated substrate is rolled for storage. Therefore, the thermoplastic adhesive coating layer is not readily exposed to dirt, UV light, etc. While not necessary, if desired, one in the art could simply apply a releasable protective layer onto the exposed surface of the thermoplastic adhesive coating. For these reasons, these alleged problems should/would not be expected to occur when the Rhine patent is modified to use the thermoplastic adhesives suggested by either Hefele or McConnell. As for Counsel's assertion that "... one skilled in the art, in view of these two references, would not know how and when to apply a second substrate.". Why

not? An obviousness question cannot be approached on the basis that an artisan having ordinary skill would have known only what they read in references, because such artisan must be presumed to know something about the art apart from what the references disclose. See In re Jacoby, 309 F.2d 513, 135 USPQ 317 (CCPA). In the present case, all that would have been needed is to apply a 2nd substrate (whenever it is desired) onto a surface of a heat-activated thermoplastic coated substrate.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Chuan C. Yao whose telephone number is (571)

272-1224. The examiner can normally be reached on Monday-Friday with second Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Richard Crispino can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Sam Chuan C. Yao
Primary Examiner
Art Unit 1733

Scy
09-08-06